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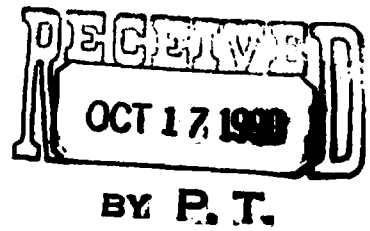
CERRO COPPER PRODUCTS CO.
P.O. Box 66800
St. Louis, MO 63166-6800
618/337-6000

October 12, 1990

CERTIFIED MAIL



Mr. Thomas G. McSwiggins
Division of Water Pollution Control
Illinois Environmental Protection Agency
2200 Churchill Road
P. O. Box 19276
Springfield, IL 62794-9276

RE: Industrial Pretreatment Permit Application
Anode Furnace Air Scrubber Recirculation and Blowdown
Treatment Systems
Cerro Copper Products Co., Sauget, IL

Dear Mr. McSwiggins:

In accordance with Pollution Control Board Rules and Regulations, Subtitle C: Wastewater, Section 309:202: Construction Permits and Section 309:204: Operating Permits; Existing Sources, enclosed is an Industrial Pretreatment Permit Application for the construction and operation of the subject wastewater treatment system.

If you should have any questions, feel free to contact my office at the phone number below.

Cordially,

CERRO COPPER PRODUCTS CO.

J M Grana

Joseph M. Grana
Manager of Environmental and Energy Affairs
618/337-6000

JMG/ge
Enclosures
cc: G. Schillinger (ABRWTP) - all attachments

bcc: P. Tandler - Cover letter, Table of Contents, Section I & II
S. Franzetti - Cover letter, Table of Contents, Section I & II
C. Schafer - all attachments

TABLE OF CONTENTS

ANODE FURNACE AIR SCRUBBER RECIRCULATION
AND BLOWDOWN TREATMENT SYSTEM

Process and Treatment Summary

Copper scrap is melted and partially purified by fire refining in reverberatory furnaces #3 or #4, and cast into anodes for further purification by electrolysis. Atmospheric emissions from the furnace are controlled by a recirculating water scrubber system. Dissolved salts (chlorides) and suspended solids build up in the recirculation system and must periodically be purged to prevent scaling and erosion.

These processes are regulated under the Nonferrous Metals Manufacturing Point Source Category, Secondary Copper Subcategory, at 40 CFR 421. Pretreatment Standards for Existing Sources at 40 CFR 421.65 require "no discharge of process wastewater pollutants into a POTW", but extensive technical studies (Appendix B) and discussions with the USEPA resulted in acceptance of the compliance plan implemented by the construction described in this permit application (Appendix C).

An interim treatment system for the recirculating water stream was installed in 1989 under permit 1989 EN-3008. In this system metals were precipitated by pH adjustment, settled, and filtered. Dissolved solids (chlorides) were controlled by a purge to the sewer.

The new treatment system consists of three parts:

A. In the scrubber recycle system, corrosion and erosion of process equipment are controlled by precipitation, sedimentation, blowdown, and pH adjustment of the recirculating stream, as follows: about 1/3 of the 600-900 gpm recirculating water stream (50C, pH 6.5) is transferred from the holding tank (701/703) to the mix tank (704) where caustic is added to pH 8, and to the flocculating tank (705) where coagulant is added. The floc and other suspended particulate material is separated in a lamella (301). A 3-7 gpm blowdown from the lamella supernatant liquid is withdrawn for chlorides control and sent to System B for further treatment. The rest of the lamella supernatant effluent (200 gpm, pH 8) rejoins the balance of the recirculating stream (400 gpm, pH 6.5, 50C), pH adjusted to pH 8 with caustic, make up water added (706), and the total returned to the scrubber recirculating system. The sludge withdrawn from the lamella is thickened (707) and transferred to System C for processing.

B. In the blowdown treatment system, dissolved metals are reduced by two stage cold precipitation and sedimentation to enable reuse of the water as agreed by the USEPA, as follows: the blowdown stream is accumulated, cooled and treated with caustic to pH 9, coagulant added and allowed to settle in batch treatment tanks (709 A,B,C). Each tank operates on a three day cycle of fill-cool-treat. The supernatant liquid is transferred to a final treatment tank (714) where the pH is further adjusted to pH 10, coagulant added, and allowed to settle. The supernatant is filtered in a polishing filter as it is transferred to a holding tank (710) for use as make up to the billet furnace air scrubber system.

C. The sludge from the lamella (301), the three batch treatment tanks (709 A,B,C), and the final treatment tank (714) is thickened (711 A,B) and filtered in a plate and frame filter press (401). The dewatered sludge will either be reclaimed on-site or bagged for reclamation off-site because of the high metals value.

For IEPA Use:
Log Number:
Date Received:

Illinois Environmental Protection Agency
Division of Water Pollution Control
Permit Section
Springfield, Illinois 62706

Application For Permit Or Construction Approval

WPC-PS-1

1. Name and Location: Anode Furnace Air Scrubber Recirculation
Name of project: And Blowdown Treatment Systems
Municipality or Township: Village of Sauget County: St. Clair

2. Brief Description of Project: Modification of an Anode Furnace Air Scrubber Recirculation And Blowdown Treatment Systems for the Secondary Copper Subcategory

3. Documents Being Submitted: If the project involves any of the items listed below, submit the corresponding schedule, and check the appropriate spaces.

Project			
Private Sewer Connection	A	Spray Irrigation	H
Public Sewer Extension	B	Septic Tanks	I
Sewer Extension Construct Only	C	Industrial Treatment or Pretreatment	J X
Sewage Treatment Works	D	Cyanide Acceptance	L
Excess Flow Treatment	E	Updating Cyanide Acceptance Form	M
Lift Station/Force Main	F	Waste Characteristics	N X
Sludge Disposal	G X	Erosion Control	P
		Trust Disclosure	T

4. Land Trust: Is the project identified in item number 1 herein, for which a permit is requested, to be constructed on land which is the subject of a trust? ☐ Yes ☒ No

If yes, Schedule T (Trust Disclosure) must be completed and item number 7.1.1 must be signed by a beneficiary, trustee or trust officer.

Plans:-Title _____ Number of Pages: _____

Specifications: Title _____ Number of Books/Pages: _____

Other Documents (Please Specify) _____

5. This is an Application for (Check Appropriate Line):

X A. Joint Construction And Operating Permit
_____ B. Authorization To Construct (See Instructions) NPDES Permit No. IL00_____ Issue Date: _____
_____ C. Construct Only Permit (Does Not Include Operations)
_____ D. Operate Only Permit (Does Not Include Construction)

Certifications and Approval:

6.1 Certificate by Design Engineer
I hereby certify that I am familiar with the information contained in this application, including the attached schedules indicated above, and that to the best of my knowledge and belief such information is true, complete and accurate. The plans and specifications (specifications other than Standard Specifications or local specifications on file with this Agency) as described above were prepared by me or under my direction.

DENNIS ALTON FAUST 62-32295 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

Engineer Dennis A. Faust (Name) 62-32295 (Registration Number) _____ (Seal)

Firm: The Chester Engineers
Address: P.O. Box 9356
Pittsburgh, Pennsylvania 15225 Phone Number: 412 / 269-5700
Signature X ..... Dennis A. Faust

7. Certifications and Approvals for Permits:

7.1 Certificate by Applicant(s)
I/We hereby certify that I/we have read and thoroughly understand the conditions and requirements of this Application, and am/are authorized to sign this application in accordance with the Rules and Regulations of the Illinois Pollution Control Board.
I/We hereby agree to conform with the Standard Conditions and with any other Special Conditions made part of this Permit.

7.1.1 Name Of Applicant For Permit Or Authorization To Construct Cerro Copper Products Company

P.O. Box 66800	St. Louis	Missouri	63166-6800
Street	City	State	Zip Code

10-5-90
Signature X .....
Title Vice President Organization Cerro Copper Products Company

The IEPA is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1039. Disclosure of this information is required under that Section. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

IL 532-0010
WPC 150 (Rev. 6/85)

C05917

7.1.2 Name Of Applicant For Permit To Own and Operate Cerro Copper Products Company

P.O. Box 66800 St. Louis Missouri 63166-6800

Street City State Zip Code

Signature X ..... (Paul Tandler)

Title Vice President

7.2 Attested (Units of Government)

Signature X ..... Date _____ Title _____

(City Clerk, Village Clerk, Sanitary District Clerk, Etc.)

7.3 Applications from non-governmental applicants which are not signed by the owner, must be signed by a principal executive officer of at least the level of vice president, or his duly authorized representative.

7.4 Certificate By Intermediate Sewer Owner

I hereby certify that (Please check one):

X 1. The sewers to which this project will be tributary have adequate reserve capacity to transport the wastewater that will be added by this project without causing a violation of the Environmental Protection Act or Subtitle C, Chapter I, or

_____ 2. The Illinois Pollution Control Board, in PCB _____ dated _____ granted a variance from Subtitle C, Chapter I to allow construction and operation of the facilities that are the subject of this application.

Name and location of sewer system to which this project will be tributary:

Village of Sauget, Illinois

Sewer System Owner Village of Sauget

2897 Falling Springs Road Sauget Illinois 62206

Street City State Zip Code

Signature X ..... Date 10/8/90 Title Mayor

7.4.1 Additional Certificate By Intermediate Sewer Owner N/A

I hereby certify that (Please check one):

_____ 1. The sewers to which this project will be tributary have adequate reserve capacity to transport the wastewater that will be added by this project without causing a violation of the Environmental Protection Act or Subtitle C, Chapter I, or

_____ 2. The Illinois Pollution Control Board, in PCB _____ dated _____ granted a variance from Subtitle C, Chapter I to allow construction and operation of the facilities that are the subject of this application.

Name and location of sewer system to which this project will be tributary: _____

Sewer System Owner _____

Street City State Zip Code

Signature X ..... Date _____ Title _____

7.5 Certificate By Waste Treatment Works Owner

I hereby certify that (Please check one):

X 1. The waste treatment plant to which this project will be tributary has adequate reserve capacity to treat the wastewater that will be added by this project without causing a violation of the Environmental Protection Act or Subtitle C, Chapter I, or

_____ 2. The Illinois Pollution Control Board, in PCB _____ dated _____ granted a variance from Subtitle C, Chapter I to allow construction and operation of the facilities that are the subject of this application.

I also certify that the industrial waste discharges described in the application is capable of being treated by the treatment works, and such waste discharges will be in compliance with all currently applicable local, state or federal pretreatment requirements.

Name and location of waste treatment works to which this project will be tributary: American Bottoms Regional Wastewater Treatment Facility and Sauget P/Chem Plant

Treatment Works Owner Village of Sauget

#1 American Bottoms Road Sauget Illinois 62201

Street City State Zip Code

Signature X George K. Schellenger Date Oct. 8, 1990 Title General Plant Manager

C05918

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DATE RECEIVED:

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF WATER POLLUTION CONTROL
PERMIT SECTION
Springfield, Illinois 62706

SCHEDULE J INDUSTRIAL TREATMENT WORKS CONSTRUCTION OR PRETREATMENT WORKS

1. NAME AND LOCATION: Anode Furnace Air Scrubber Recirculation
   1.1 Name of project And Blowdown Treatment Systems
   1.2 Plant Location
      1.2.1 SE (Quarter Section) · 26 (Section) 2N (Township) Low (Range) 3 (P.M.)
      1.2.2 Latitude 38 · 35 · 47 "North
      Longitude 90 · 10 · 15 "West
      1.2.3 Name of USGS Quadrangle Map (7.5 or 15 Minutes)

2. NARRATIVE DESCRIPTION AND SCHEMATIC WASTE FLOW DIAGRAM: (see instructions)
   Modify existing and construct and operate additional treatment facilities for Anode Furnace Scrubber Recirculating And Blowdown Streams, per USEPA approval (Appendix B). See Appendix E&D for engineering and design specifications and drawings.
   2.1 PRINCIPAL PRODUCTS: Copper Cathode
   2.2 PRINCIPAL RAW MATERIALS: Copper Scrap

3. DESCRIPTION OF TREATMENT FACILITIES:
   3.1 Submit a flow diagram through all treatment units showing size, volumes, detention times, organic loadings, surface settling rate, weir overflow rate, and other pertinent design data. Include hydraulic profiles and description of monitoring systems. See attached drawings in Appendix E
   3.2 Waste Treatment Works is: Batch X (1), Continuous 2 (2); No. of Batches/day 1, No. of Shifts/day 1
   3.3 Submit plans and specifications for proposed construction. Attached - Appendix E & D
   3.4 Discharge is: Existing X; Will begin on

4. DIRECT DISCHARGE IS TO: Receiving Stream, Municipal Sanitary Sewer, Municipal storm or municipal combined sewer. If receiving stream or storm sewer indicated complete the following:
   Name of receiving stream Sauget sewers; tributary to Village P/Chem Plant
   tributary to ABRWTF*; tributary to Mississippi River

5. Is the treatment works subject to flooding? If so, what is the maximum flood elevation of record (in reference to the treatment works datum) and what provisions have been made to eliminate the flooding hazard? No

6. APPROXIMATE TIME SCHEDULE: Estimated construction schedule:
   Start of Construction; Date of Completion March 1, 1991
   Operation Schedule March 1, 1991; Date Operation Begins March 1, 1991
   100% design load to be reached by year N/A

*American Bottoms Regional WAstewater Treatment Facility

(1) Blowdown Treatment
(2) Air Scrubber Recirculation Treatment

7. DESIGN LOADINGS N/A (Process wastewater pretreatment system only)

7.1 Design population equivalent (one population equivalent is 100 gallons of wastewater per day, containing 0.17 pounds of BOD_5 and 0.20 pounds of suspended solids:

BOD_____; Suspended Solids_____; Flow_____.

7.2 Design Average Flow Rate_____MGD.

7.3 Design Maximum Flow Rate_____MGD.

7.4 Design Minimum Flow Rate_____MGD.

7.5 Minimum 7-day, 10-year low flow_____cfs_____MGD.

Minimum 7-day, 10-year flow obtained from_____.

7.6 Dilution Ratio_____:_____.

8. FLOW TO TREATMENT WORKS (if existing):

8.1 Flow (last 12 months)

8.1.1 Average Flow 0.003 MGD

8.1.2 Maximum Flow 0.020 MGD

8.2 Equipment used in determing above flows will be flow meter.

9. Has a preliminary engineering report for this project been submitted to this Agency for Approval? Submitted to USEPA See Appendix A and B

YES__ NO X. If so, when was it submitted and approved. Date Submitted_____

Certification_____

Dated_____

10. List Permits previously issued for the facility: Pretreatment Permit #108

Construction Permit Nos: 1990-EN-4693 & 1988-EN-1953 & 1990-EN-1036 and 1989-EN-3008

11. Describe provisions for operation during contingencies such as power failures, flooding, peak loads, equipment failure, maintenances shut-downs and other emergencies.

The production operation will be shutdown when contingencies or emergencies set forth above are encountered.

12. Complete and submit Schedule G if sludge disposal will be required by this facility.

13. WASTE CHARACTERISTICS: Schedule N must be submitted.

14. TREATMENT WORKS OPERATOR CERTIFICATION: List names and certification numbers of certified operators:

Joe D. Burroughs 357 28 6407

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1038. Disclosure of this information is required under that Section. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

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DIVISION OF WATER POLLUTION CONTROL
PERMIT SECTION
Springfield, Illinois 62706

SCHEDULE X WASTE CHARACTERISTICS

Anod Furnace Air Scrubber Recirculation

1. Name of Project And Blowdown Treatment Systems

2. FLOW DATA

	EXISTING	PROPOSED-DESIGN
2.1 Average Flow (gpd)	3,000-10,000	Zero to sewer
2.2 Maximum Daily Flow (gpd)	20,000	Zero to sewer

2.3 TEMPERATURE

Time of year	Ave. Intake Temp. F	Avg. Effluent Temp. F	Max. Intake Temp. F	Max. Effluent Temp. F	Max. Temp. Outside Mixing Zone F
SUMMER					
WINTER					

2.4 Minimum 7-day, 10-year flow: _____ cfs _____ MGD. N/A

2.5 Dilution Ratio: _____ : _____ N/A

2.6 Stream flow rate at time of sampling _____ cfs (N/A) MGD.

3. CHEMICAL CONSTITUENT Existing Permitted Conditions ___; Existing conditions (1) Proposed Permitted Conditions See Appendix A

Type of sample: ___ grab (time of collection ___); ___ composite (Number of samples per day ___)

(see instructions for analyses required) Values for (2) from Appendix B

Values for (1) from Table 21 of Concept Design in Appendix C

Constituent	RAW WASTE Max. (mg/l) (1)	TREATED EFFLUENT Avg. (mg/l) Max. (2)	UPSTREAM/DOWNSTREAM SAMPLES (mg/l) (mg/l)
Ammonia Nitrogen (as N)			
Arsenic (total)			
Barium			
Boron			
BOD_5			
Cadmium	36	2.0	
Carbon Chloroform Extract			
Chloride			
Chromium (total hexavalent)			
Chromium (total trivalent)			
Copper	420	2.0	
Cyanide (total)			
Cyanide (readily released @150°F & pH 4.5)			
Dissolved Oxygen			
Fecal Coliform			

IL 532-0819

C05921

	RAW WASTE (mg/l)	TREATED EFFLUENT (mg/l)	UPSTREAM (mg/l)	DOWNSTREAM SAMPLES (mg/l)
Fluoride				
Hardness (as $CaCO_3$)				
Iron (total)				
Lead	70	2.0		
Manganese				
MBAS				
Mercury				
Nickel				
Nitrates (as N)				
Oil & Grease (Hexane solubles or equivalents)				
Organic Nitrogen (as N)				
pH	7	10		
Phenols				
Phosphorous (as P)				
Radioactivity				
Selenium				
Silver				
Sulfate				
Suspended Solids				
Total Dissolved Solids				
Zinc	.450	6.0		
Others				

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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF WATER POLLUTION CONTROL
PERMIT SECTION
Springfield, Illinois 62794-9276

SCHEDULE G SLUDGE DISPOSAL & UTILIZATION

1. Name of Project: Anode Furnace Air Scrubber Recirculation And Blowdown Treatment Systems*

2. General Information: Lamella (301); 3 batch treatment tanks (709 ABC);

2.1 Source(s): Final Treatment Tank (714); Thickner (711 AB); Fitter Press (401)

2.2 Production Volume per year _____ Dry Tons per year _____

2.3 Sludge to be disposed of is: Liquid _____ Dry _____

2.4 Sludge is: Aerobically digested ____, Anaerobically digested ____, Heat anaerobically digested ____, Raw ____, Chemically Stabilized ____,
Composted ____, Wastewater Lagoon ____, WTP Lime ____, WTP Alum ____, WTP Iron ____, Other ____, If other, describe _____
Mixture _____, If mixture, describe _____

2.5 Is the sludge defined as hazardous by State or Federal Law? ____ YES ____ NO. If yes, basis

2.6 Is sludge to be stored on the STP site? ____ YES ____ NO. If yes, type of storage, lagoon _____ storage tank _____ other _____
If other, describe _____ capacity of storage, _____ cu. ft

2.7 Sludge Hauling

2.7.1 Name(s), address(es) and Illinois Transporters I.D. Numbers _____

2.7.2 For industrial generators, has Illinois Generator ID Number and Authorization Number been issued? _____ YES _____ NO. If no, contact the Division of Land Pollution Control

Illinois Generator ID Number _____

Authorization Number _____

3. Methods of Sludge Disposal and/or Utilization

3.1 Land Application ☐

3.1.1 Indicate the number of dry tons of sludge per year to be disposed by each of the following methods:

Agricultural land ____, Commercial Fertilizer Production ____, Dedicated Land Disposal ____, Disturbed Land Reclamation ____, Silviculture ____
Horticultural Lands ____, Public Distribution ____, Other ____, If other, specify _____

3.1.2 Sludge Disposal Site Location. Provide a map (USGS Quadrangle map or plat map) showing location.

Name of USGS Quadrangle maps (7.5 or 15 minute) or plat map _____

3.1.3 Provide soil survey map and soil description for disposal site.

*All solids/sludge generated will either be reclaimed on-site or bagged for reclamation off-site because of the high metals value.